

## PARALLEL NETWORK PROCESSOR ARRAY

### ABSTRACT OF THE DISCLOSURE

5 A method and system performs parallel processing of asynchronous processes on ordered entities. A system focuses on the average time and variance of the variable time process. Each processor can run multiple contexts. The processing may be divided into a number of stages, each of which can be performed by each of the processors. A system also needs to ensure that the order of the entities is preserved as desired. This order may be maintained by performing some type of pre-processing on the entities to determine their order, and then not starting processing on an entity until the processing of any entity which must precede that entity has been completed. For processing of packets in a network, it may be needed to ensure that packets in the same flow maintain their order after processing. A system also may determine the number of processors that optimally are needed in order to process an incoming stream of entities at a desired speed. This computation may depend on how many different contexts each processor runs. In addition, this computation also may depend on whether there is an input buffer available to store the incoming entities, and the capacity of such an input buffer.

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